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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,172	09/08/2003	Satyanarayan R. Panpaliya	CM05887J	3335

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EXAMINER	
DEAN, RAYMOND S	
ART UNIT	**PAPER NUMBER**
2618	

DATE MAILED: 10/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/658,172	PANPALIYA ET AL.	
	Examiner	Art Unit	
	Raymond S. Dean	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 July 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1, 8, 14, and 15 have been considered but are moot in view of the new ground(s) of rejection.

Carmon et al. (5, 960, 360), hereafter Carmon, teaches at a receiving device in a time division multiplexing system wherein the receiving device is in the group call in talk around mode with a transmitting device (Cols. 1 lines 10 – 13, 2 lines 50 – 52, 3 lines 36 – 41); receiving a signal on a forward channel (Cols. 2 lines 50 – 52, 3 lines 36 – 41, the mobiles are communicating in a talk around mode thus there will be signals received on a forward channel and signals transmitted on a reverse channel). Carmon teaches a TDMA system (Col. 1 lines 10 – 13) which means that a channel will be logically divided into several time slots wherein said time slots are allocated to the mobile stations. This division enables a channel to be shared by a plurality of mobile stations. The time slots enable each mobile station to use the same channel for a finite period of time, which is a temporal characteristic.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 – 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carmon et al. (5,960,360) in view of Chen et al. (US 2003/0134655).

Regarding Claim 1, Carmon teaches a method of transmit power control during a group call to a plurality of devices comprising the steps of: at a receiving device in a time division multiplexing system wherein the receiving device is in the group call in talk around mode with a transmitting device (Cols. 1 lines 10 – 13, 2 lines 50 – 52, 3 lines 36 – 41); receiving a signal on a forward channel (Cols. 2 lines 50 – 52, 3 lines 36 – 41, the mobiles are communicating in a talk around mode thus there will be signals received on a forward channel and signals transmitted on a reverse channel); a common reverse channel to the transmitting device that is in the group call (Col. 1 lines 10 – 13, Carmon teaches a TDMA system which means that a channel will be logically divided into several time slots wherein said time slots are allocated to the mobile stations, this division enables a channel to be shared by a plurality of mobile stations, the time slots enable each mobile station to use the same channel for a finite period of time, which is a temporal characteristic)

Carmon does not teach estimating a signal quality for the signal received on the forward channel, if the signal quality is below a threshold, transmitting a power control message on at least a portion of a common reverse channel to the transmitting device that is in the group call, wherein the power control message requests an increase in transmit power for subsequently received signals.

Chen teaches a dispatch system in which there is estimating a signal quality for the signal received on the forward channel (Section 0065), if the signal quality is below a threshold, transmitting a power control message on at least a portion of a reverse channel, wherein the power control message requests an increase in transmit power for subsequently received signals (Sections: 0016 – 0018, 0065).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Carmon with the power control method of Chen for the purpose of ensuring that a desired quality of service (QoS) is delivered to the mobile devices as taught by Chen.

Regarding Claim 2, Carmon in view of Chen teaches all of the claimed limitations recited in Claim 1. Chen further teaches continually transmitting the power control message until a signal quality of a subsequently received signal on the forward channel exceeds a second threshold (Section 0067).

Regarding Claim 3, Carmon in view of Chen teaches all of the claimed limitations recited in Claim 1. Chen further teaches wherein the signal quality is based on at least one of the following measurements: a bit error rate, a message error rate, a frame error rate, a received signal strength indicator, a symbol error rate, a waveform eye opening, a frequency lock and a time lock (Section 0065).

Regarding Claim 4, Carmon in view of Chen teaches all of the claimed limitations recited in Claim 1. Chen further teaches wherein the power control message is transmitted along with control symbols (Section 0070).

Regarding Claim 5, Carmon in view of Chen teaches all of the claimed limitations recited in Claim 1. Chen further teaches wherein the power control message is transmitted along with synchronization symbols and control symbols (Section 0070).

Regarding Claim 6, Carmon in view of Chen teaches all of the claimed limitations recited in Claim 1. Chen further teaches wherein the power control message further provides synchronization (Section 0070).

Regarding Claim 7, Carmon in view of Chen teaches all of the claimed limitations recited in Claim 1. Chen further teaches if the signal quality is above the threshold, not transmitting a power control message on at least a portion of the reverse channel (Section 0067).

Regarding Claim 8, Carmon teaches a method of transmit power control during a group call to a plurality of receiving devices comprising the steps of: at a transmitting device in a time division multiplexing system wherein the transmitting device is in the group call in talk around mode with the plurality of receiving devices (Cols. 1 lines 10 – 13, 2 lines 50 – 52, 3 lines 36 – 41); transmitting at least one signal on a forward channel at a transmit power level (Cols. 2 lines 50 – 52, 3 lines 36 – 41, typical mobiles transmit signals at some particular power level); wherein a common reverse channel is temporally same and shared by the plurality of receiving devices in the group call (Col. 1 lines 10 – 13, Carmon teaches a TDMA system which means that a channel will be logically divided into several time slots wherein said time slots are allocated to the mobile stations, this division enables a channel to be shared by a plurality of mobile

stations, the time slots enable each mobile station to use the same channel for a finite period of time, which is a temporal characteristic)

Carmon does not teach adjusting the transmit power level based on observing a common reverse channel.

Chen teaches adjusting the transmit power level based on observing a reverse channel (Section 0065).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Carmon with the power control method of Chen for the purpose of ensuring that a desired quality of service (QoS) is delivered to the mobile devices as taught by Chen.

Regarding Claim 9, Carmon in view of Chen teaches all of the claimed limitations recited in Claim 8. Chen further teaches wherein the transmit power level is adjusted by a step size (Section 0065, the power will be adjusted by a particular increment, which is the step size).

Regarding Claim 10, Carmon in view of Chen teaches all of the claimed limitations recited in Claim 8. Chen further teaches increasing the transmit power level when a presence of a predetermined number of power control messages is observed on the reverse channel within a window of time (Section 0065).

4. Claims 11 – 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carmon et al. (5,960,360) in view of Chen et al. (US 2003/0134655) as applied to Claim 8 above, and further in view of Komatsu (5,852,782).

Regarding Claim 11, Carmon in view of Chen teaches all of the claimed limitations recited in Claim 8. Chen further teaches a non-presence of a predetermined number of power control messages is observed on the reverse channel within a window of time (Section 0067).

Carmon in view of Chen does not teach decreasing the transmit power level when a non-presence of a predetermined number of power control messages is observed on the reverse channel within a window of time (Section 0067).

Komatsu teaches decreasing the transmit power level (Column 6 lines 24 – 27).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Carmon in view of Chen with the decrease in power method of Komatsu for the purpose of maintaining a particular quality or grade of services such as a particular carrier to interference ratio as taught by Komatsu.

Regarding Claim 12, Carmon in view of Chen teaches all of the claimed limitations recited in Claim 8. Chen further teaches a non-presence of a predetermined number of power control messages is observed on the reverse channel within a window of time (Section 0067).

Carmon in view of Chen does not teach detecting a transmit power oscillation; setting an oscillation counter to a predetermined value based on the transmit power oscillation, wherein the predetermined value is a non-zero integer; decrementing the oscillation counter value when a non-presence of a predetermined number of power control messages is observed on the reverse channel within a window of time; and decreasing the transmit power level by a predetermined step size.

Komatsu teaches detecting a transmit power oscillation (Figures 5A, 5B, Columns: 7 lines 62 – 67, lines 1 – 53, oscillatory change of the transmit power); setting an oscillation counter to a predetermined value based on the transmit power oscillation (Figures 5A, 5B, Columns: 7 lines 62 – 67, lines 1 – 53, keeps track of oscillatory changes in the transmit power thus there will be a counter that sets a corresponding value such that said tracking is maintained), wherein the predetermined value is a non-zero integer (Figures 5A, 5B, Columns: 7 lines 62 – 67, lines 1 – 53, keeps track of oscillatory changes in the transmit power thus there will be a counter that sets a corresponding value such that said tracking is maintained); decrementing the oscillation counter value (Figures 5A, 5B, Columns: 7 lines 62 – 67, lines 1 – 53, keeps track of oscillatory changes in the transmit power thus there will be a counter that sets a corresponding value such that said tracking is maintained); and decreasing the transmit power level by a predetermined step size (Column 6 lines 24 – 27).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Carmon in view of Chen with the oscillation method of Komatsu for the purpose of restraining the oscillation or fluctuation in power thus restraining the increase in control error of the transmission power which deteriorates the signal quality as taught by Komatsu.

Regarding Claim 13, Carmon in view of Chen and in further view of Komatsu teaches all of the claimed limitations recited in Claim 12. Komatsu further teaches wherein the predetermined step size is a minimum value (Column 6 lines 24 – 27).

Regarding Claim 14, Carmon teaches a method of transmit power control during a group call to a plurality of receiving devices comprising the steps of: at a transmitting device in a time division multiplexing system wherein the transmitting device is in the group call in talk around mode with the plurality of receiving devices (Cols. 1 lines 10 – 13, 2 lines 50 – 52, 3 lines 36 – 41); transmitting signals on a forward channel at a transmit power level (Cols. 2 lines 50 – 52, 3 lines 36 – 41, typical mobiles transmit signals at some particular power level), wherein a common reverse channel is temporally same and shared by the plurality of receiving devices (Col. 1 lines 10 – 13, Carmon teaches a TDMA system which means that a channel will be logically divided into several time slots wherein said time slots are allocated to the mobile stations, this division enables a channel to be shared by a plurality of mobile stations, the time slots enable each mobile station to use the same channel for a finite period of time, which is a temporal characteristic).

Carmon does not teach switching between three power states based on one of: a presence of X power control messages on a common reverse channel within a first window of time, or a non-presence of Y power control messages on the common reverse channel within a second window of time; and dynamically adjusting the transmit power level for subsequent signals based on a current power state, wherein a first power state is to maintain a current transmit power level, a second power state is to decrease the current transmit power level, and the third power state is to increase the current transmit power level, and wherein X and Y are integer values.

Chen teaches switching between at least one power state based on one of: a presence of X power control messages on a reverse channel within a first window of time, or a non-presence of Y power control messages on the reverse channel within a second window of time (Section 0065); and dynamically adjusting the transmit power level for subsequent signals based on a current power state (Section 0065), wherein a first power state is to maintain a current transmit power level (Section 0067, the power level will be maintained for the subscribers that abstain from feeding back the power control message), and the third power state is to increase the current transmit power level, and wherein X and Y are integer values (Section 0065).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Carmon with the power control method of Chen for the purpose of ensuring that a desired quality of service (QoS) is delivered to the mobile devices as taught by Chen.

Carmon in view of Chen does not teach a second power state that is to decrease the current transmit power level.

Komatsu teaches a power state that is to decrease the current transmit power level (Column 6 lines 24 – 27).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Carmon in view of Chen with the decrease in power method of Komatsu for the purpose of maintaining a particular quality or grade of services such as a particular carrier to interference ratio as taught by Komatsu.

Regarding Claim 15, Carmon teaches a method of transmit power control during a group call to a plurality of receiving devices comprising the steps of: at a transmitting device in a time division multiplexing system wherein the transmitting device is in the group call in talk around mode with the plurality of receiving devices (Cols. 1 lines 10 – 13, 2 lines 50 – 52, 3 lines 36 – 41); setting a transmit power level to a predetermined power level (Cols. 2 lines 50 – 52, 3 lines 36 – 41, typical mobiles transmit signals at some particular power level); transmitting at least one signal on a forward channel at a the predetermined power level (Cols. 2 lines 50 – 52, 3 lines 36 – 41, typical mobiles transmit signals at some particular power level), and a common reverse channel (Col. 1 lines 10 – 13, Carmon teaches a TDMA system which means that a channel will be logically divided into several time slots wherein said time slots are allocated to the mobile stations, this division enables a channel to be shared by a plurality of mobile stations, the time slots enable each mobile station to use the same channel for a finite period of time, which is a temporal characteristic).

Carmon does not teach if a first predetermined number of power control messages are detected on a common reverse channel within a first time frame, increasing the transmit power level for subsequent signals; if a second predetermined number of power control messages are not detected on the reverse channel within a second time frame, decreasing the transmit power level for subsequent signals; otherwise, maintaining the transmit power level.

Chen teaches if a first predetermined number of power control messages are detected on a reverse channel within a first time frame, increasing the transmit power

level for subsequent signals (Section 0065); if a second predetermined number of power control messages are not detected on the reverse channel within a second time frame, maintaining the transmit power level (Section 0067, the power level will be maintained for the subscribers that abstain from feeding back the power control message).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Carmon with the power control method of Chen for the purpose of ensuring that a desired quality of service (QoS) is delivered to the mobile devices as taught by Chen.

Carmon in view of Chen does not teach if a second predetermined number of power control messages are not detected on the reverse channel within a second time frame, decreasing the transmit power level for subsequent signals.

Komatsu teaches decreasing the transmit power level for subsequent signals (Column 6 lines 24 – 27).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Carmon in view of Chen with the decrease in power method of Komatsu for the purpose of maintaining a particular quality or grade of services such as a particular carrier to interference ratio as taught by Komatsu.

Regarding Claim 16, Carmon in view of Chen and in further view of Komatsu teaches all of the claimed limitations recited in Claim 15. Carmon further teaches wherein the predetermined power level is a maximum power level (Cols. 2 lines 50 – 52,

3 lines 36 – 41, the mobiles will have maximum and minimum power levels at which they can transmit).

Regarding Claim 17, Carmon in view of Chen and in further view of Komatsu teaches all of the claimed limitations recited in Claim 15. Carmon further teaches wherein the predetermined power level is a minimum power level (Cols. 2 lines 50 – 52, 3 lines 36 – 41, the mobiles will have maximum and minimum power levels at which they can transmit).

5. Claims 18 – 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carmon et al. (5,960,360) in view of Chen et al. (US 2003/0134655) as applied to Claims 1, 8 above, and further in view of Cao et al. (US 2003/0144021).

Regarding Claim 18, Carmon in view of Chen teaches all of the claimed limitations recited in Claim 1. Carmon in view of Chen does not teach wherein the power control message includes at least a power control preamble message which is a predetermined a priori known message.

Cao teaches a power control preamble message which is a predetermined a priori message (Section 0028, there is a power control preamble (PCP) length and thus a PCP message).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the power control system of Carmon in view of Chen with the PCP message for the purpose of ensuring the power control loop is properly set up and functioning as taught by Cao.

Regarding Claim 19, Carmon in view of Chen teaches all of the claimed limitations recited in Claim 8. Carmon in view of Chen does not teach transmitting a power control message comprising at least a power control preamble message that is predetermined and known a priori to the plurality of receiving devices.

Cao teach a power control preamble message that is predetermined and known a priori (Section 0028, there is a power control preamble (PCP) length and thus a PCP message).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the power control system of Carmon in view of Chen with the PCP message for the purpose of ensuring the power control loop is properly set up and functioning as taught by Cao.

6. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carmon et al. (5,960,360) in view of Chen et al. (US 2003/0134655) in view of Komatsu (5,852,782), as applied to Claim 14 above, and further in view of Cao et al. (US 2003/0144021).

Regarding Claim 20, Carmon in view of Chen and in further view of Komatsu teaches all of the claimed limitations recited in Claim 14. Carmon in view of Chen and in further view of Komatsu does not teach power control preamble messages that are predetermined and known a priori to the plurality of receiving devices.

Cao teaches power control preamble messages that are predetermined and known a priori (Section 0028, there is a power control preamble (PCP) length and thus a PCP message).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the power control system of Carmon in view of Chen and in further view of Komatsu with the PCP message for the purpose of ensuring the power control loop is properly set up and functioning as taught by Cao.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond S. Dean whose telephone number is 571-272-7877. The examiner can normally be reached on Monday-Friday 6:00-2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F. Urban can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Raymond S. Dean
September 21, 2006

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